Traffic Control Devices Manual Part 8

Code of practice for temporary traffic management (CoPTTM)

manual number: SP/M/010

Section H

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More information

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LEVEL 3 DIAGRAMS LIST

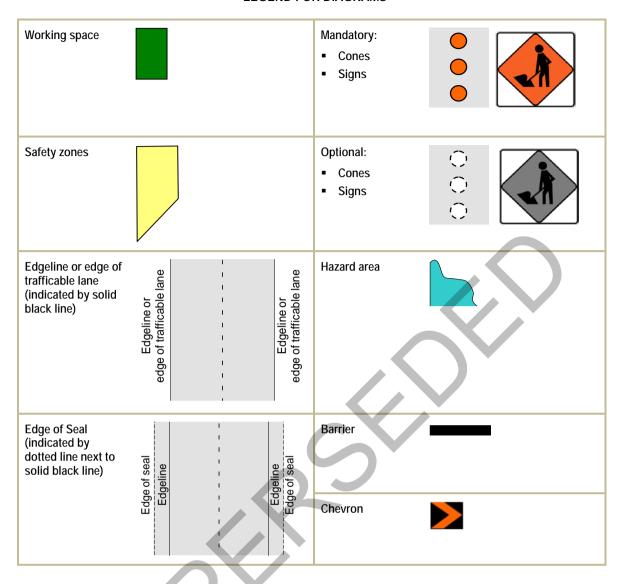
STATIC OPERATIONS

No.	LEVEL 3 ROADS	
ONE-WA	Y MULTI-LANE ROAD	
H1.1	Shoulder closure	No temporary speed limit
H1.2	Other hazard	Flooding, slips, slippery surface
H1.3	Right-lane closure	
H1.4	Two-lane closure	One-lane temporary diversion
H1.5	Left-lane closure	Chicane layout
H1.6	Site access	
H1.7	Right-lane closure	
H1.8	Left-lane closure	Chicane layout
H1.9	Right and centre lane closure	
H1.10	Left and centre lane closure	Chicane layout
H1.11	Right and centre lane closure	Two lane temporary diversion
H1.12	Left-lane closure	On-ramp within worksite
H1.13	Left-lane closure	Off-ramp within worksite
H1.14	Off-ramp closure	
H1.15	Road closure	Detour via off ramp
H1.16a	Closure example	On-ramp within worksite
H1.16b	Closure example	Low accessed site
H1.16c	Closure example	High accessed site
H1.16d	Closure example	Off-ramp within worksite
H1.17	Long-term closure	Left-lane closure - barrier
H1.18	Long-term closure	Right-lane closure - barrier

MOBILE OPERATIONS

ONE-W	AY MULTI-LANE ROAD	
H2.1	Work vehicle is more than five (5) metres from the edgeline - Zone A	
H2.2	Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B	Rear visibility is GREATER than the clear sight distance
H2.3	Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B	Rear visibility is LESS than the clear sight distance
H2.4	Work vehicle is between zero (0) and two (2) metres from the edgeline - Zone C	
H2.5	Work vehicle on live lane - Zone C	
H2.6	Work vehicle on live lane or within 2m from live lane - Zone C	No available shoulder width for AWVMS within 1,600m of work vehicle
H2.7	Work vehicle on live lane or within 2m from live lane - Zone C	Personnel on the live lane
H3.1	Semi-static closure	Left-lane closure
H3.2	Semi-static closure	Right and centre lane closure

LEGEND FOR DIAGRAMS



LEVEL 3 LAYOUT DISTANCES TABLE

Peri	manent/TSL (km/h)	♦ 80	100	
Tra	ffic signs	·		
Α	Sign visibility distance (m)	100	120	
С	Sign spacing (m) - Desirable	160	200	
*	Sign spacing (m) - Minimum	80	100	
Safe	ety zones			
D	Longitudinal (m)*	45	60	
E	Lateral (m)			
	1. Behind cones etc	1	1	
	2. Behind concrete barrier	0.5	0.5	
	3. Behind other barriers	As recommended by manufacturers		
Тар	ers			
H	Initial taper length per lane (m)**	150	180	
1	Subsequent taper length per lane (m)	80	100	
K	Minimum distance between tapers (m)	80	100***	
Deli	neation devices			
(Se	All tapers (m)	2.5	2.5	
(centre	Cones parallel to the lane (eg between tapers and alongside the working space) (m)	10	10	
Spacing (centres)	At merge and diverge points for ramps and slip lanes, intersecting road entry and exit points, and worksite access points	2.5m for 20m either side of a change in alignment		

- For temporary speeds less than 80km/h use the C2.6 Level 2 worksite layout distances table.
- The desirable sign spacing distance must be used wherever possible. The minimum sign spacing distance may only be used where there are road environment constraints.

Where only one sign is erected in advance of the start of a cone taper the distance from the sign to the start of the taper must be 2xC.

- * A longitudinal safety zone is not required when a barrier completely protects the approach end of the worksite. Refer subsections H1.17 and H1.18
- ** Taper length is based on a single lane shift of 3.5m.
- *** Must be altered if required to meet the supplementary TSL distance.

Lane widths									
Speed (km/h)		30	40	50	60	70	80	90	100
Œ	Lane width (m)	2.75	2.75	3.0	3.0	3.25	3.25	3.5	3.5

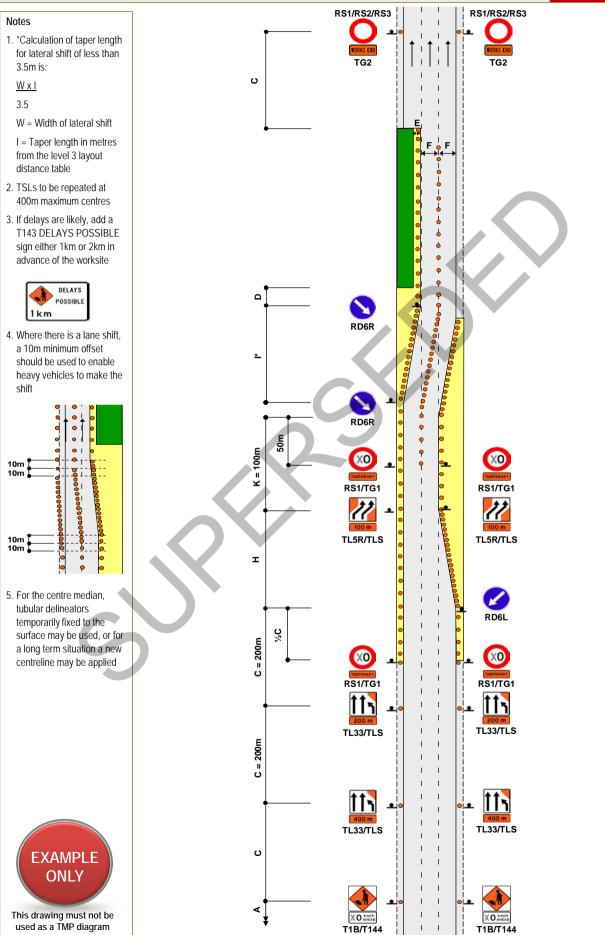
General

Except for delineation device spacings, which are maximum values, the distances specified in the above table are minimum values. Approach signage, the initial taper(s) and any longitudinal safety zone associated with that taper must be based on the permanent speed limit. Any subsequent tapers, and the remainder of the worksite, are based on the applicable permanent or TSL.

ONLY

T1B/T144

ONE-WAY MULTI-LANE ROAD Left-lane closure Chicane layout



Notes RS1/RS2/RS3 RS1/RS2/RS3 1. *Calculation of taper length for lateral shift of less than 3.5m is: TG2 TG2 WxI ပ 3.5 W = Width of lateral shift I = Taper length in metres from the level 3 layout distance table 2. TSLs to be repeated at 400m maximum centres 3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite ۵ DELAYS POSSIBLE 1 km 4. Refer C.4.3.1 - On level 3 roads cones are required from the TSL sign to the start of the taper or hazard area where no taper is K = 100minstalled XO RS1/TG1 RS1/TG1 Î'n 1 TL2R/TLS TL2R/TLS C = 200mRS1/TG1 RS1/TG1 TL33/TLS TL33/TLS C = 200m TL33/TLS TL33/TLS ပ **EXAMPLE ONLY** This drawing must not be used as a TMP diagram T1B/T144

Chicane layout Notes RS1/RS2/RS3 RS1/RS2/RS3 1. *Calculation of taper length for lateral shift of less than 3.5m is: TG2 TG2 WxI ပ 3.5 W = Width of lateral shift I = Taper length in metres from the level 3 layout distance table 2. TSLs to be repeated at ۵ 400m maximum centres 3. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in 2 X I advance of the worksite DELAYS POSSIBLE 1 km ¥ 4. Where there is a lane shift, a 10m minimum offset should be used to enable heavy vehicles to make the shift 10m 10m XO XO RS1/TG1 RS1/TG1 Ĩ٢ 10m 10m TL2R/TLS TL2R/TLS 5. Refer C.4.3.1 - On level 3 roads cones are required from the TSL sign to the start of the taper or hazard C = 200marea where no taper is installed RS1/TG1 RS1/TG1 TL33/TLS TL33/TLS C = 200mTL33/TLS TL33/TLS ပ **EXAMPLE ONLY**

This drawing must not be

used as a TMP diagram

XO AMEAD

T1B/T144

XO AHEAD

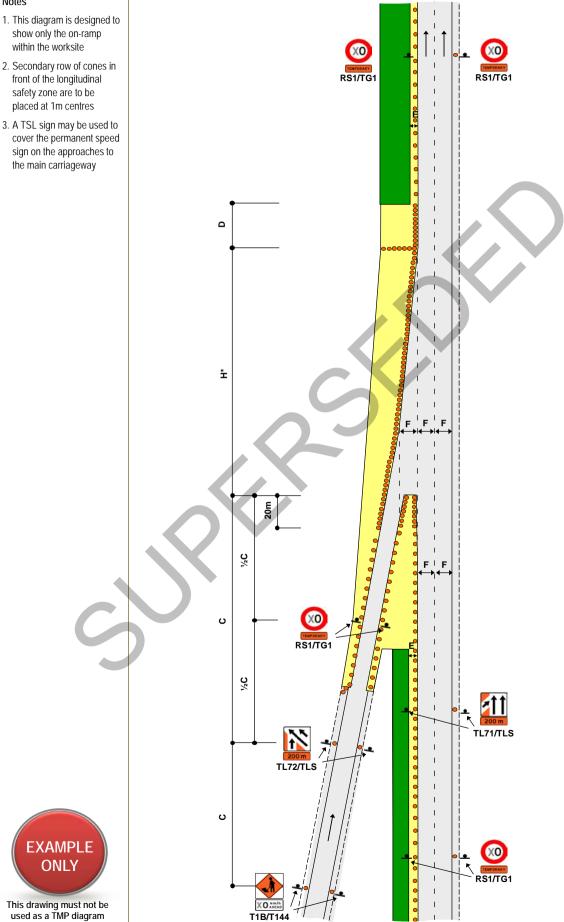
ONE-WAY MULTI-LANE ROAD Right and centre lane closure Two lane temporary diversion

H1.11 Level 3

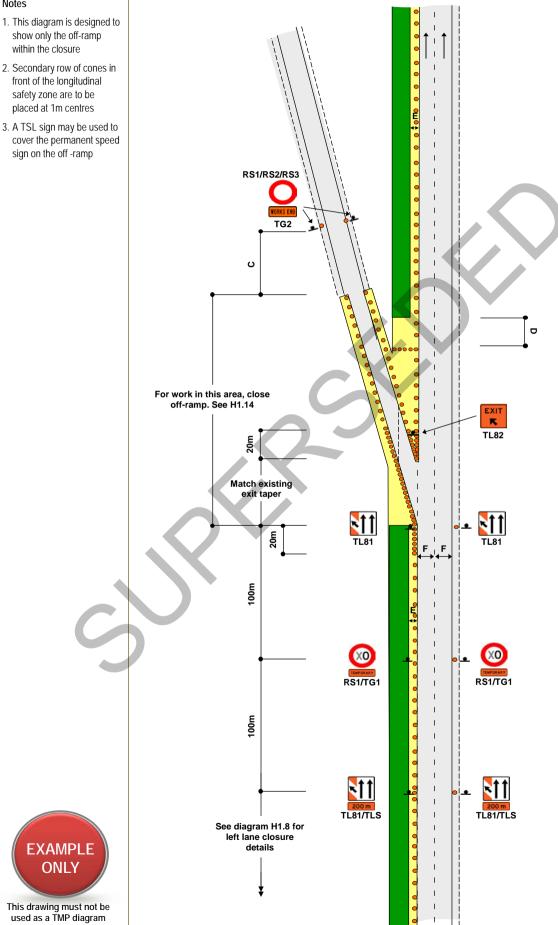
Notes RS1/RS2/RS3 RS1/RS2/RS3 1. *Calculation of taper length for lateral shift of less than 3.5m is: TG2 TG2 WxI ပ 3.5 W = Width of lateral shift I = Taper length in metres from the level 3 layout distance table * 2. TSLs to be repeated at 400m maximum centres 3. If delays are likely, add a T143 DELAYS POSSIBLE C = 100msign either 1km or 2km in advance of the worksite POSSIBLE TL5R/TLS TL5R/TLS 1 km 1 4. Where there is a lane shift, a 10m minimum offset RD6L should be used to enable heavy vehicles to make the shift 10m 10m XO XO RS1/TG1 RS1/TG1 TL5L/TLS TL5L/TLS 5. For the centre median, tubular delineators temporarily fixed to the surface may be used, or for C = 200ma long term situation a new centreline may be applied RS1/TG1 RS1/TG1 TL33/TLS TL33/TLS C = 200mTL33/TLS TL33/TLS ပ **EXAMPLE ONLY** This drawing must not be used as a TMP diagram

X O AMEA T1B/T144

- show only the on-ramp within the worksite
- 2. Secondary row of cones in front of the longitudinal safety zone are to be placed at 1m centres
- 3. A TSL sign may be used to cover the permanent speed sign on the approaches to the main carriageway



- show only the off-ramp
- front of the longitudinal safety zone are to be



ONE-WAY MULTI-LANE ROAD H1.14 Off-ramp closure Level 3 Notes 1. A 10m taper, with a minimum of 5 cones, is allowed where shoulder width is 2.5m or less 2. If a 10m taper is used, an RD6R is only required at TG2 TG2 the head of the taper 3. *For shoulders exceeding 2.5m width, apply the calculation of taper length ဂ for lateral shift of less than 3.5m: WxH 3.5 W = Width of lateral shift H = Taper length in metres from the level 3 layout distance table 4. Cones used to close offramp to be placed at 1m centres 5. Secondary line of cones at end of longitudinal safety zone to be placed at 1m centres 6. Block access to road with TDA5 barricade/barrier RD6R ပ TD3A TD3A ပ TD2 ပ **EXAMPLE ONLY** This drawing must not be used as a TMP diagram

ONE-WAY MULTI-LANE ROAD Road closure Detour via off ramp

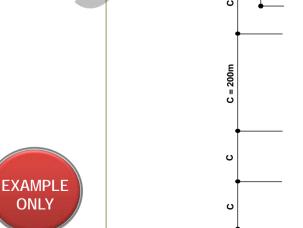
H1.15 Level 3

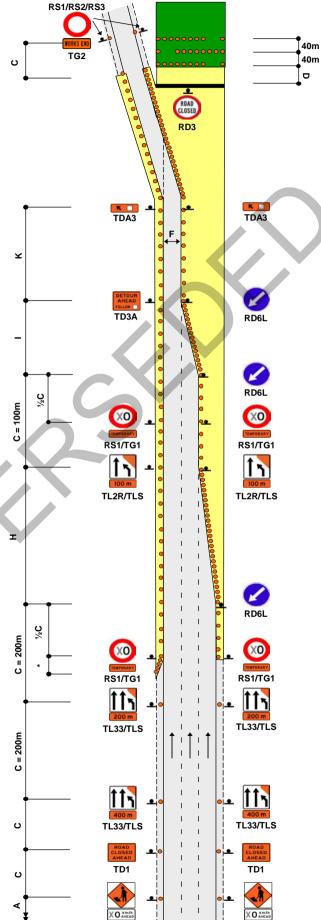
Notes

- 1. *A 10m taper, with a minimum of 5 cones, is allowed where shoulder width is 2.5m or less
- 2. If a 10m taper is used, an RD6R is only required at the head of the taper
- 3. Block access to road with
- 4. At the beginning of the working space place three lines of cones 40m apart accross lanes and shoulder. Cones to be placed at 1m centres. Leave a 2.5m gap in opposite ends of each line of cones to allow site access
- 5. TSLs to be repeated at 400m maximum centres
- 6. If delays are likely, add a T143 DELAYS POSSIBLE sign either 1km or 2km in advance of the worksite



7. C.4.3.1 - On level 3 roads cones are required from the TSL sign to the start of the taper or hazard area where no taper is installed. Where the edgeline is well defined (ie by a clean kerb and channel) the line of cones is not required





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This drawing must not be

used as a TMP diagram

T1B/T144

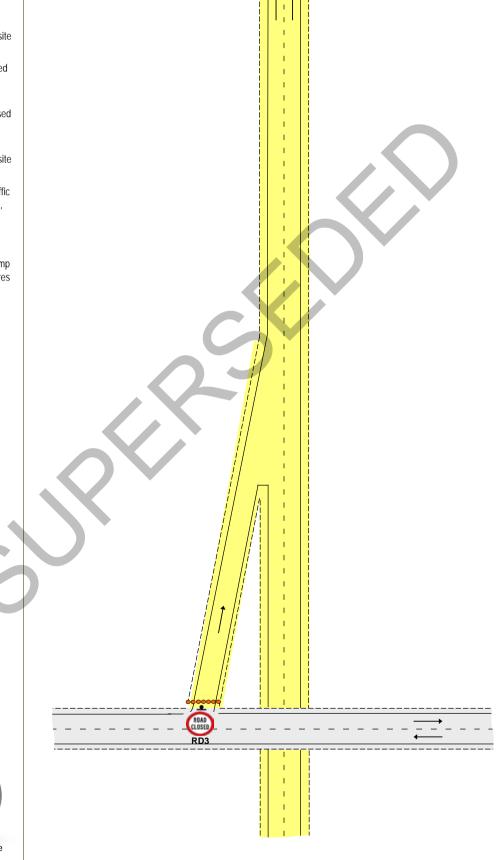
T1B/T144

ONE-WAY MULTI-LANE ROAD Closure example On-ramp within worksite

H1.16a

Notes

- This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
 - H1.16a Closure of on-ramp within worksite
 - H1.16b Closure example low accessed site
 - H1.16b Closure example high accessed site
 - H1.16d Closure of off-ramp within worksite
- Where a motorway is completely closed to traffic in one or both directions, any on or off ramps impacted must also be closed
- 3. Cones across the on-ramp to be placed at 1m centres

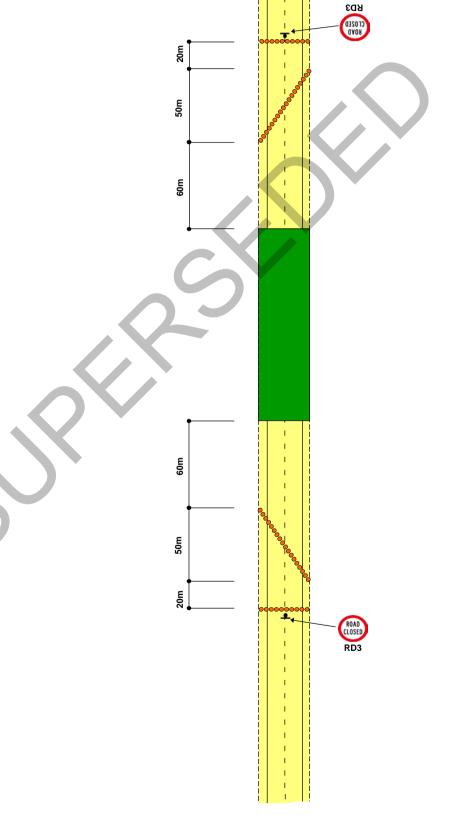


ONE-WAY MULTI-LANE ROAD Closure example Low accessed site within worksite

H1.16b

Notes

- This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
 - H1.16a Closure of on-ramp within worksite
 - H1.16b Closure example low accessed site
 - H1.16b Closure example high accessed site
 - H1.16d Closure of off-ramp within worksite
- Where the motorway is completely closed to traffic in one direction or both directions, the normal application of road closure signs, cones, barriers, fences or barricades at on and off ramps must be reinforced by a double line of cones at a normal warning distance from the working space
- 3. The double lines of cones must be either continuous or chicaned
- TMA vehicles parked outside this inner cordon must be parked with their attenuators down and facing the normal direction of traffic. Vehicles inside the cordoned worksite are not subject to this requirement
- 5. Cones in tapers and across road to be placed at 1m centres





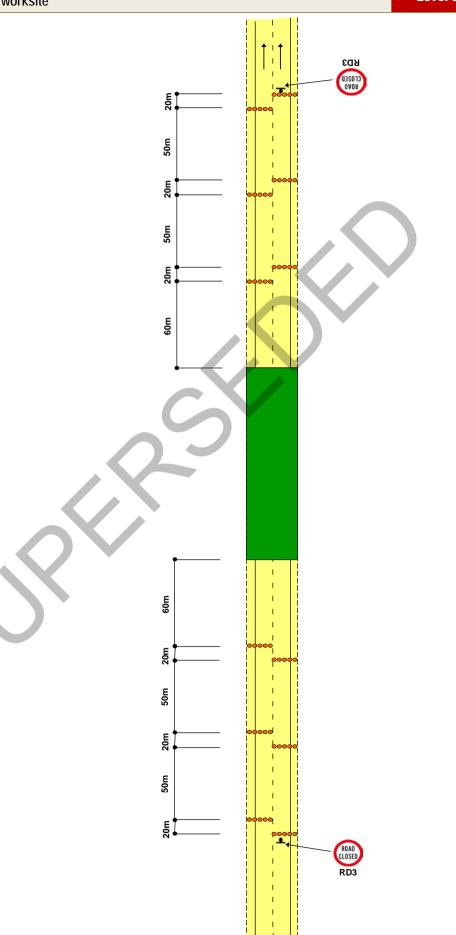
ONE-WAY MULTI-LANE ROAD Closure example High accessed site within worksite

H1.16c Level 3

Notes

- This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
 - H1.16a Closure of on-ramp within worksite
 - H1.16b Closure example low accessed site
 - H1.16b Closure example high accessed site
 - H1.16d Closure of off-ramp within worksite
- Where the motorway is completely closed to traffic in one direction or both directions, the normal application of road closure signs, cones, barriers, fences or barricades at on and off ramps must be reinforced by a double line of cones at a normal warning distance from the working space
- 3. The double lines of cones must be either continuous or chicaned
- 4. TMA vehicles parked outside this inner cordon must be parked with their attenuators down and facing the normal direction of traffic. Vehicles inside the cordoned worksite are not subject to this requirement
- 5. Where there are oversized vehicles being used, the 20m gap in the chicanes may be increased
- 6. This is a secondary safety element for the worksite
- 7. Cones in chicanes to be placed at 1m centres



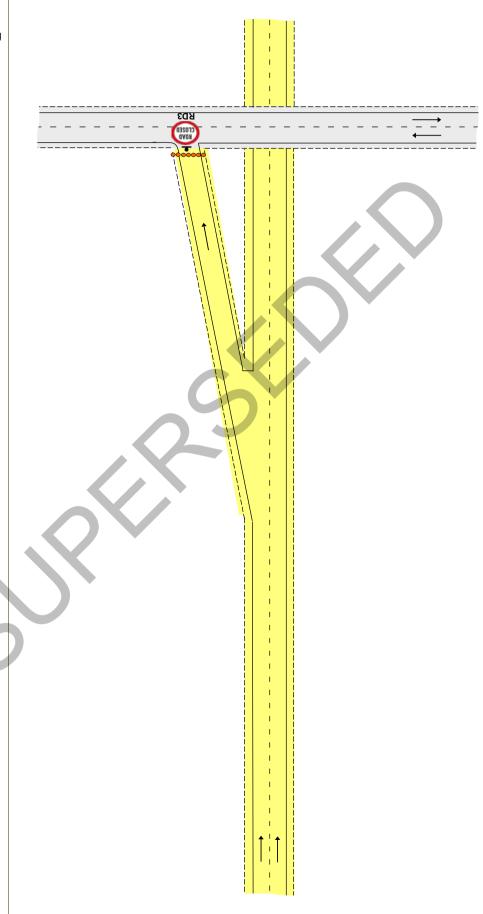


ONE-WAY MULTI-LANE ROAD Closure example Off-ramp within worksite

H1.16d

Notes

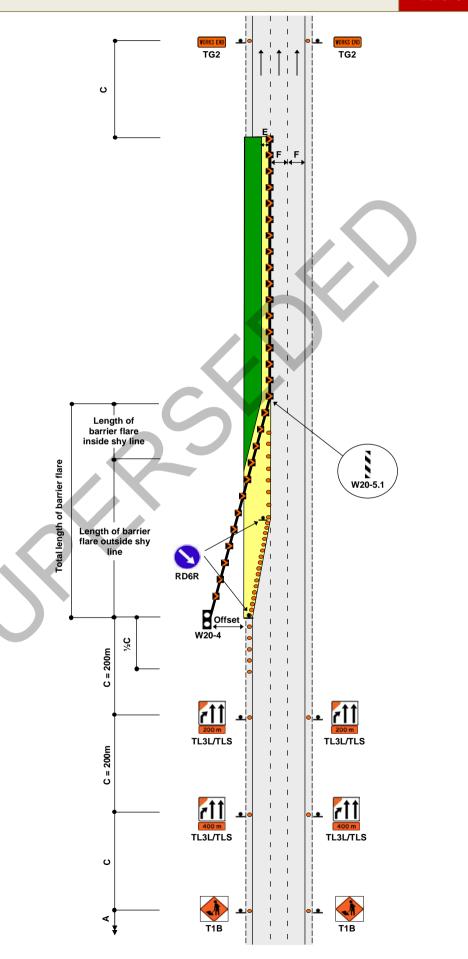
- This diagram is part of a series of diagrams providing example diagrams for a motorway closure:
 - H1.16a Closure of on-ramp within worksite
 - H1.16b Closure example low accessed site
 - H1.16b Closure example high accessed site
 - H1.16d Closure of off-ramp within worksite
- Where a motorway is completely closed to traffic in one direction or both directions, any on or off ramps impacted must also be closed
- 3. Cones across the on-ramp to be placed at 1m centres





Notes

- 1. Barrier end treatment depends on its distance from the edgeline. Refer C18.4 for details
- A black/white right-hand bridge end marker post must be used to delineate the approach end of the barrier at its narrowest point
- 3. Offset depends on speed ie 100km/h = 9m
- 4. Total length of barrier flare depends on:
 - the offset from the live lane line
 - the width of lane and shoulder closed
 - barrier flare rates, and
 - the offset of the barrier end from the edgeline
- 5. Hazard marker must be used to delineate the barrier terminal



EXAMPLE ONLY

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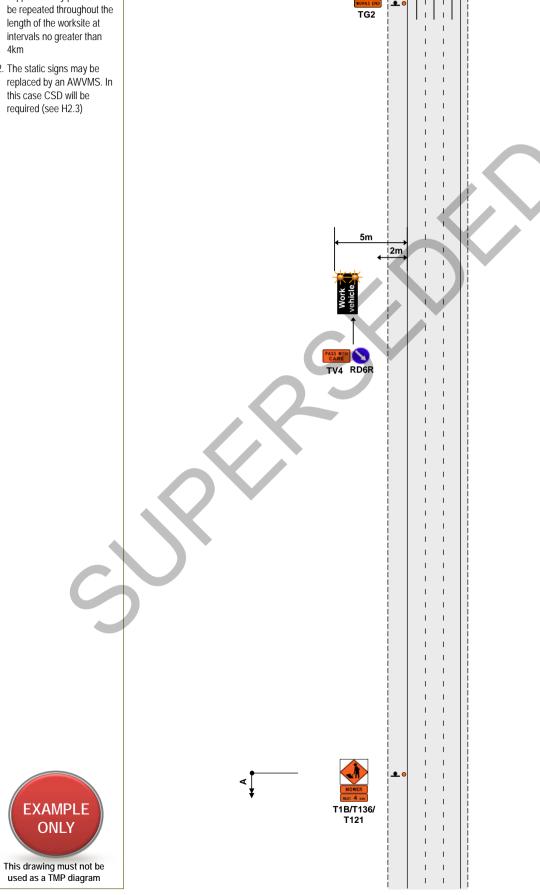
ONE-WAY MULTI-LANE ROAD H2.1 Work vehicle is more than five (5) metres from the edgeline - Zone A Level 3 Notes Worksite can be managed by a level 2/3 STMS-NP Greater than 5m T1B/T136 **EXAMPLE ONLY** This drawing must not be used as a TMP diagram

ONE-WAY MULTI-LANE ROAD

Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B Rear visibility is GREATER than the clear sight distance

H2.2 Level 3

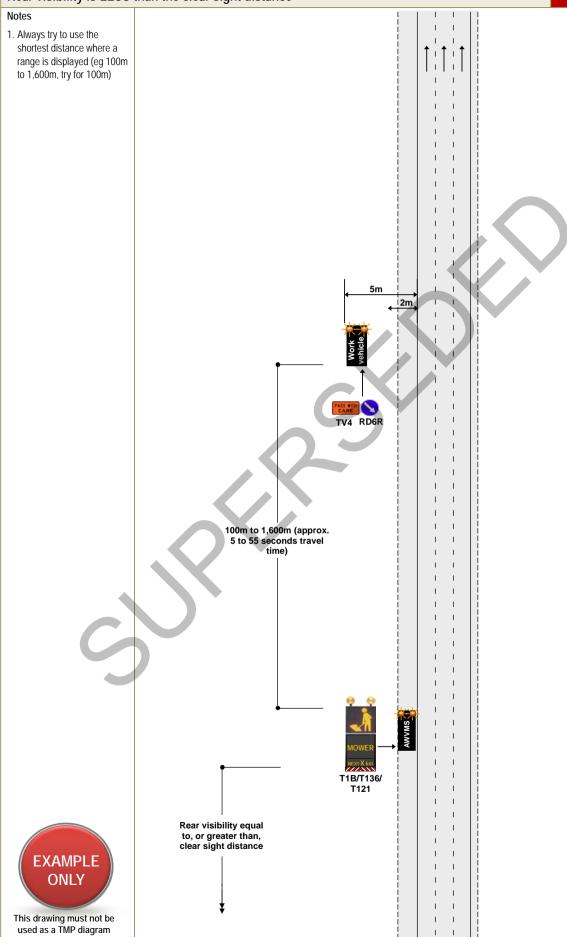
- 1. The T1B sign and supplementary plates must be repeated throughout the length of the worksite at intervals no greater than
- 2. The static signs may be replaced by an AWVMS. In this case CSD will be required (see H2.3)



ONE-WAY MULTI-LANE ROAD

Work vehicle is between two (2) and five (5) metres from the edgeline - Zone B Rear visibility is LESS than the clear sight distance

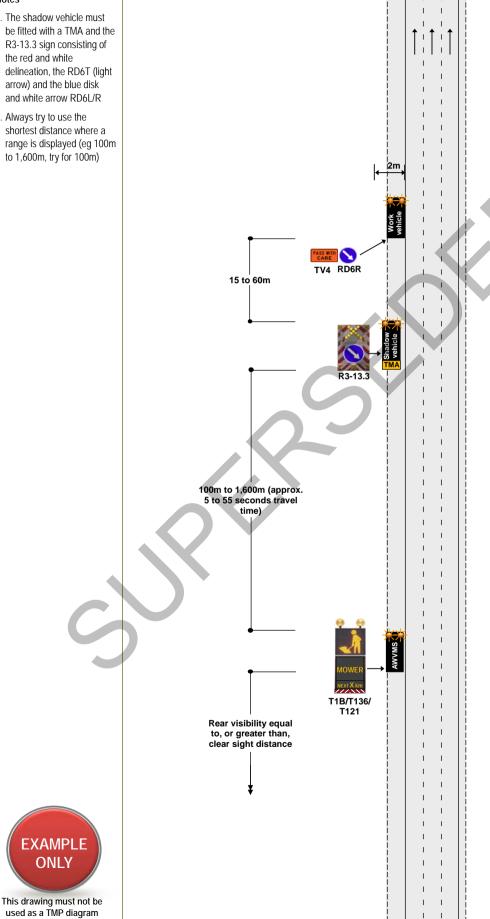
H2.3 Level 3



H2.4 Level 3

Notes

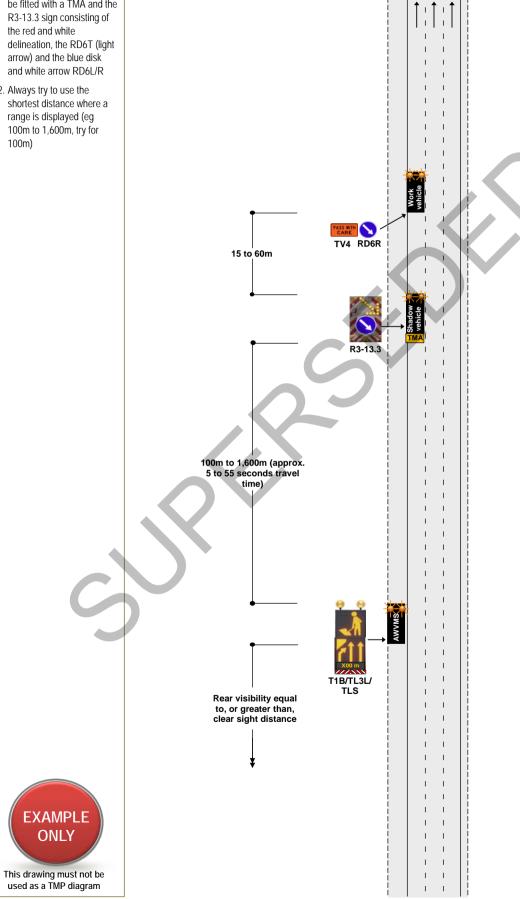
- 1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
- 2. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



H2.5 Level 3

Notes

- 1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
- 2. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



Rear visibility equal to, or greater than, clear sight distance

EXAMPLE ONLY

This drawing must not be used as a TMP diagram

H2.6

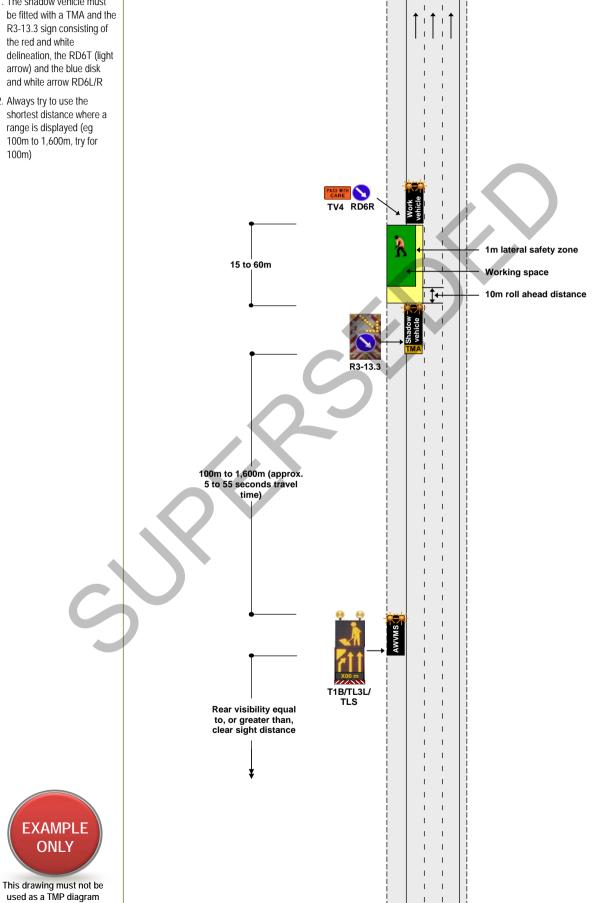
Level 3

ONE-WAY MULTI-LANE ROAD Work vehicle on live lane or within 2m from live lane - Zone C Personnel on the live lane

H2.7 Level 3

Notes

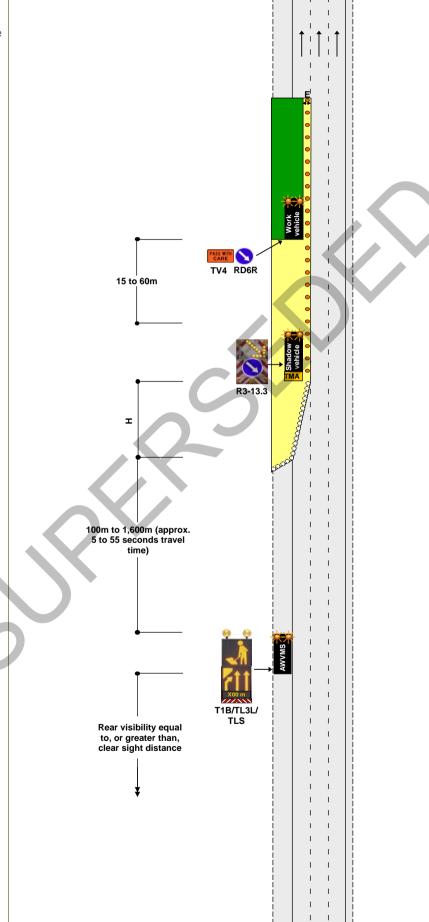
- 1. The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
- 2. Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



EXAMPLE ONLY

Notes

- The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
- 2. The AWVMS may be replaced by T1B signs installed on both sides of the road
- 3. Where an AWVMS is used, cone taper (H) is optional
- Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



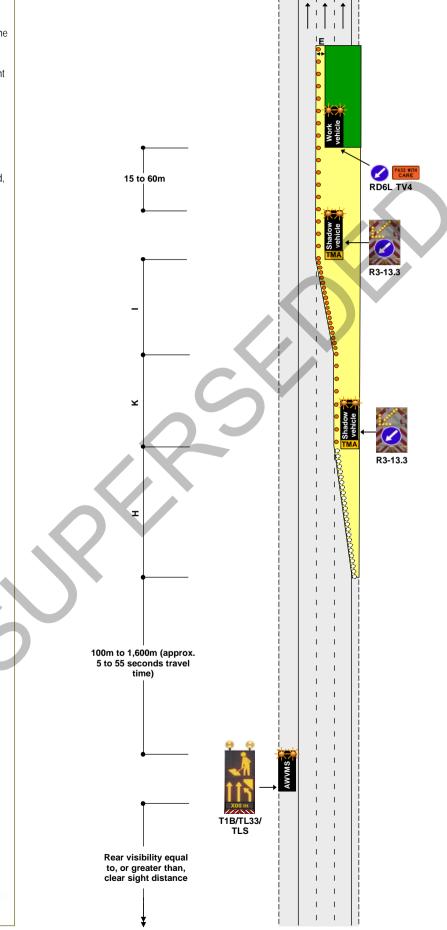
EXAMPLE ONLY

ONE-WAY MULTI-LANE ROAD Semi-static closure Right and centre lane closure

H3.2 Level 3

Notes

- The shadow vehicle must be fitted with a TMA and the R3-13.3 sign consisting of the red and white delineation, the RD6T (light arrow) and the blue disk and white arrow RD6L/R
- 2. The AWVMS may be replaced by T1B signs installed on both sides of the road
- 3. Where an AWVMS is used, cone taper (H) is optional
- Always try to use the shortest distance where a range is displayed (eg 100m to 1,600m, try for 100m)



EXAMPLE

ONLY

Note:

This page is to be used as the layout distances table for the level 2 static and mobile diagrams.

Print this page on A3 paper and fold it to fit an A4 page.

Unfold this page when you want to view the layout distances table and a diagram at the same time.

Working space		Mandatory: Cones Signs
Safety zones		Optional: Cones Signs
Edgeline or edge of trafficable lane (indicated by solid black line)	Edgeline or edge of trafficable lane Edgeline or Edgeline or edge of trafficable lane	Hazard area
Edge of Seal (indicated by dotted line next to solid black line)	Edge of seal Edgeline Edgeline Edge of seal	Barrier

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LEVEL 3 LAYOUT DISTANCES TABLE

Per	manent/TSL (km/h)	♦80	100	
Tra	ffic signs	•	;	
Α	Sign visibility distance (m)	100	120	
С	Sign spacing (m) - Desirable	160	200	
*	Sign spacing (m) - Minimum	80	100	
Safe	ety zones			
D	Longitudinal (m)*	45	60	
Е	Lateral (m)			
	1. Behind cones etc	1	1	
	2. Behind concrete barrier	0.5	0.5	
	3. Behind other barriers	As recommende	d by manufacturer	
Тар	ers			
Н	Initial taper length per lane (m)**	150	180	
Į	Subsequent taper length per lane (m)	80	100	
K	Minimum distance between tapers (m)	80	100***	
Del	ineation devices			
es)	All tapers (m)	2.5	2.5	
(centre	Cones parallel to the lane (eg between tapers and alongside the working space) (m)	10	10	
Spacing (centres)	At merge and diverge points for ramps and slip lanes, intersecting road entry and exit points, and worksite access points	2.5m for 20m either side of a change in alignment		
	For tamparary speeds loss than 20km /h use the C2 6 Loyal 2 y	regisette legges et al:	arana arang kalala	

- For temporary speeds less than 80km/h use the C2.6 Level 2 worksite layout distances table.
- The desirable sign spacing distance must be used wherever possible. The minimum sign spacing distance may only be used where there are road environment constraints.
 Where only one sign is erected in advance of the start of a cone taper the distance from the sign to the start of the taper must be 2xC.
- * A longitudinal safety zone is not required when a barrier completely protects the approach end of the worksite. Refer subsections H1.17 and H1.18
- ** Taper length is based on a single lane shift of 3.5m.
- *** Must be altered if required to meet the supplementary TSL distance.

Lane widths									
Speed (km/h) 30 40			40	50	60	70	80	90	100
E	Lane width (m)	2.75	2.75	3.0	3.0	3.25	3.25	3.5	3.5

General

Except for delineation device spacings, which are maximum values, the distances specified in the above table are minimum values. Approach signage, the initial taper(s) and any longitudinal safety zone associated with that taper must be based on the permanent speed limit. Any subsequent tapers, and the remainder of the worksite, are based on the applicable permanent or TSL.